STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 98051

TO: Laurie A Mayes
Location: r 10A16; m 9B01
Art Unit: 1653
Thursday, July 03, 2003

Case Serial Number: 09/819098

From: Barb O'Bryen
Location: Biotech-Chem Library
CM1-6A05
Phone: 308-4291

barbara.obryen@uspto.gov

Search Notes

Ex. Mayes,
there isn't a way to force a non-specific mutation at a particular point in a sequence for doing a search. (i.e. we don't have way, in our standard search system, to say, " position 309 is any amino acid *other than* Phe"). I retrieved the sequence you specified from the NCBI website & searched it. If matches are found to seqs with mutations at 309 or 562, the mutations will show up as non-matches or conservative substitutions at those points.
Please let me know if you have any questions.
Barb O'Bryen
308-4291

JOURNAL Biochemistry 41 (37), 11269-11276 (2002)
MEDLINE 22209045
PUBMED 12220193
REMARK GeneRIF: The activation of procofactor VIII to factor VIIIa increases the affinity of binding to platelets of both factor VIIIa and factor X.

REFERENCE 5 (residues 1 to 2351)
AUTHORS Bogdanova,N., Markoff,A., Pollmann,H., Nowak-Gottl,U., Eisert,R., Dworniczak,B., Eigel,A. and Horst,J.
TITLE Prevalence of small rearrangements in the factor VIII gene F8C among patients with severe hemophilia A
JOURNAL Hum. Mutat. 20 (3), 236-237 (2002)
MEDLINE 22191118
PUBMED 12204009
REMARK GeneRIF: Reported nine novel (6 deletions, two indels and one partial duplication) and five recurrent small rearrangements identified in 15 German patients with severe hemophilia A.

REFERENCE 6 (residues 1 to 2351)
AUTHORS Frusconi,S., Passerini,I., Girolami,F., Masieri,M., Linari,S., Longo,G., Morfini,M. and Torricelli,F.
TITLE Identification of seven novel mutations of F8C by DHPLC
JOURNAL Hum. Mutat. 20 (3), 231-232 (2002)
MEDLINE 22191107
PUBMED 12203998
REMARK GeneRIF: Seven novel mutations causing severe, moderate and mild Hemophilia A.

REFERENCE 7 (residues 1 to 2351)
AUTHORS Jenkins,P.V., Freas,J., Schmidt,K.M., Zhou,Q. and Fay,P.J.
TITLE Mutations associated with hemophilia A in the 558-565 loop of the factor VIIIa A2 subunit alter the catalytic activity of the factor Xase complex
JOURNAL Blood 100 (2), 501-508 (2002)
MEDLINE 22085818
PUBMED 12091341
REMARK GeneRIF: Mutations associated with hemophilia A in the 558-565 loop of the factor VIIIa A2 subunit alter the catalytic activity of the factor Xase complex.

REFERENCE 8 (residues 1 to 2351)
AUTHORS Ananyeva,N.M., Kouiavskaia,D.V., Shima,M. and Saenko,E.L.
TITLE Intrinsic pathway of blood coagulation contributes to thrombogenicity of atherosclerotic plaque
JOURNAL Blood 99 (12), 4475-4485 (2002)
MEDLINE 22032682
PUBMED 12036878
REMARK GeneRIF: increased procoagulant activity due to formation of additional fVIII phosphatidylserine binding sites on the outer surface of oxLDL-treated cells and higher binding affinity between components of the Xase complex, activated factors VIII and IX.

REFERENCE 9 (residues 1 to 2351)
AUTHORS Koszelak Rosenblum,M.E., Schmidt,K., Freas,J., Mastri,M. and Fay,P.J.
TITLE Cofactor activities of factor VIIIa and A2 subunit following cleavage of A1 subunit at Arg336
JOURNAL J. Biol. Chem. 277 (14), 11664-11669 (2002)
MEDLINE 21922803
PUBMED 11799130
REMARK GeneRIF: Cofactor activities of factor VIIIa and A2 subunit following cleavage of A1 subunit at Arg336

REFERENCE 10 (residues 1 to 2351)
AUTHORS Obraztsov,I.F., Kuz'min,V.M., Khanin,M.A., Kogan,A.E.,

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Anan'eva,N.M. and Saenko,E.L.
TITLE Effect of factor VIII deficiency on generation of thrombin: a biomechanical approach
JOURNAL Dokl Biochem Biophys 383, 119-121 (2002)
MEDLINE 22054191
PUBMED 12058364
REMARK GeneRIF: Effect of deficiency on generation of thrombin
REFERENCE 11 (residues 1 to 2351)
AUTHORS Cutler,J.A., Mitchell,M.J., Smith,M.P. and Savidge,G.F.
TITLE The identification and classification of 41 novel mutations in the factor VIII gene (F8C)
JOURNAL Hum. Mutat. 19 (3), 274-278 (2002)
MEDLINE 21846190
PUBMED 11857744
REMARK GeneRIF: Forty-one novel causative factor VIII gene mutations have been identified and classified in hemophiliacs.
REFERENCE 12 (residues 1 to 2351)
AUTHORS Liu,M.L., Nakaya,S. and Thompson,A.R.
TITLE Non-inversion factor VIII mutations in 80 hemophilia A families including 24 with alloimmune responses
JOURNAL Thromb. Haemost. 87 (2), 273-276 (2002)
MEDLINE 21847284
PUBMED 11858487
REMARK GeneRIF: Heteroduplex screening identified 74 small mutations in the F8 genes of 72 families with hemophilia A. In 24 families, at least one affected member had an alloimmune response to F8: of these, 11 were associated with missense mutations.
REFERENCE 13 (residues 1 to 2351)
AUTHORS Stoilova-McPhie,S., Villoutreix,B.O., Mertens,K., Kemball-Cook,G. and Holzenburg,A.
TITLE 3-Dimensional structure of membrane-bound coagulation factor VIII: modeling of the factor VIII heterodimer within a 3-dimensional density map derived by electron crystallography
JOURNAL Blood 99 (4), 1215-1223 (2002)
MEDLINE 21818513
PUBMED 11830468
REMARK GeneRIF: 3-Dimensional structure of membrane-bound coagulation factor VIII from electron crystallography
REFERENCE 14 (residues 1 to 2351)
AUTHORS Khrenov,A., Sarafanov,A., Ananyeva,N., Kouiavskaia,D., Shima,M., Schwinn,H., Josic,D. and Saenko,E.
TITLE Molecular basis for different ability of low-density and high-density lipoproteins to support activity of the intrinsic Xase complex
JOURNAL Thromb. Res. 105 (1), 87-93 (2002)
MEDLINE 21854514
PUBMED 11864712
REMARK GeneRIF: Activation by thrombin dramatically increased fVIII affinity for LDL but not HDL, which may be related to differences in phospholipid composition of the LPs.
REFERENCE 15 (residues 1 to 2351)
AUTHORS Xie,Y.G., Zheng,H., Leggo,J., Scully,M.F. and Lillicrap,D.
TITLE A founder factor VIII mutation, valine 2016 to alanine, in a population with an extraordinarily high prevalence of mild hemophilia A
JOURNAL Thromb. Haemost. 87 (1), 178-179 (2002)
MEDLINE 21836995
PUBMED 11848452
REMARK GeneRIF: A founder factor VIII mutation, valine 2016 to alanine, was found in a Newfoundland population with an extraordinarily high

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prevalence of mild hemophilia A.
REFERENCE 16 (residues 1 to 2351)
AUTHORS Brummer,J., Groth,J., Flayeh,R., Wagener,C. and Jung,R.
TITLE Absence of mutations at the APC interacting sites of factor VIII in Caucasians
JOURNAL Thromb. Haemost. 87 (1), 170 (2002)
MEDLINE 21836989
PUBMED 11848448
REMARK GeneRIF: No mutations at the APC interacting sites exons 8, 11, & 19) of factor VIII were found in Caucasians with recurrent deep venous thrombosis.
REFERENCE 17 (residues 1 to 2351)
AUTHORS Reipert,B.M., Sasgary,M., Ahmad,R.U., Auer,W., Turecek,P.L. and Schwarz,H.P.
TITLE Blockade of CD40/CD40 ligand interactions prevents induction of factor VIII inhibitors in hemophilic mice but does not induce lasting immune tolerance
JOURNAL Thromb. Haemost. 86 (6), 1345-1352 (2001)
MEDLINE 21632021
PUBMED 11776297
REFERENCE 18 (residues 1 to 2351)
AUTHORS Bogdanova,N., Lemcke,B., Markoff,A., Pollmann,H., Dworniczak,B., Eigel,A. and Horst,J.
TITLE Seven novel and four recurrent point mutations in the factor VIII (F8C) gene
JOURNAL Hum. Mutat. 18 (6), 546 (2001)
MEDLINE 21614886
PUBMED 11748850
REMARK GeneRIF: Eleven pathological changes in the factor VIII sequence detected in male patients with haemophilia A or in female obligate carriers.
REFERENCE 19 (residues 1 to 2351)
AUTHORS Long,G., Zhu,C. and Liu,J.
TITLE The significance of nucleotide repeat sequences in FVIII gene for detecting hemophilia A carriers
JOURNAL Zhonghua Xue Ye Xue Za Zhi 22 (10), 511-513 (2001)
MEDLINE 21620598
PUBMED 11769673
REMARK GeneRIF: Fourteen of the 21 females were confirmed to be carriers.
REFERENCE 20 (residues 1 to 2351)
AUTHORS Maugard,C., Tuffery,S., Aguilar-Martinez,P., Schved,J.F., Gris,J.C., Demaille,J. and Claustres,M.
TITLE Protein truncation test: detection of severe haemophilia a mutation and analysis of factor VIII transcripts
JOURNAL Hum. Mutat. 11 (1), 18-22 (1998)
MEDLINE 98111374
PUBMED 9450898
REFERENCE 21 (residues 1 to 2351)
AUTHORS Bowen,D.J. and Hampton,K.K.
TITLE Analysis of the BglI restriction fragment length polymorphism in the human factor VIII gene using 'virtual PCR'--a novel approach employing the polymerase chain reaction in the absence of sequence information for the locus
JOURNAL Hum. Genet. 98 (2), 219-222 (1996)
MEDLINE 96305455
PUBMED 8698347
REFERENCE 22 (residues 1 to 2351)
AUTHORS Lakich,D., Kazazian,H.H. Jr., Antonarakis,S.E. and Gitschier,J.
TITLE Inversions disrupting the factor VIII gene are a common cause of severe haemophilia A

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JOURNAL Nat. Genet. 5 (3), 236-241 (1993)
MEDLINE 94100976
PUBMED 8275087
REFERENCE 23 (residues 1 to 2351)
AUTHORS Levinson,B., Kenwrick,S., Gamel,P., Fisher,K. and Gitschier,J.
TITLE Evidence for a third transcript from the human factor VIII gene
JOURNAL Genomics 14 (3), 585-589 (1992)
MEDLINE 93052386
PUBMED 1427887
REFERENCE 24 (residues 1 to 2351)
AUTHORS Gitschier,J. and Wood,W.I.
TITLE Sequence of the exon-containing regions of the human factor VIII gene
JOURNAL Hum. Mol. Genet. 1 (3), 199-200 (1992)
MEDLINE 93265012
PUBMED 1303178
REFERENCE 25 (residues 1 to 2351)
AUTHORS Gitschier,J.
TITLE The molecular basis of hemophilia A
JOURNAL Ann. N. Y. Acad. Sci. 614, 89-96 (1991)
MEDLINE 91221499
PUBMED 1902642
REFERENCE 26 (residues 1 to 2351)
AUTHORS Patterson,M., Gitschier,J., Bloomfield,J., Bell,M., Dorkins,H., Froster-Iskenius,U., Sommer,S., Sobell,J., Schaid,D., Thibodeau,S. et al.
TITLE An intronic region within the human factor VIII gene is duplicated within Xq28 and is homologous to the polymorphic locus DXS115 (767)
JOURNAL Am. J. Hum. Genet. 44 (5), 679-685 (1989)
MEDLINE 89205550
PUBMED 2565080
REFERENCE 27 (sites)
AUTHORS Youssoufian,H., Wong,C., Aronis,S., Platokoukis,H., Kazazian,H.H. Jr. and Antonarakis,S.E.
TITLE Moderately severe hemophilia A resulting from Glu----Gly substitution in exon 7 of the factor VIII gene
JOURNAL Am. J. Hum. Genet. 42 (6), 867-871 (1988)
MEDLINE 88220354
PUBMED 2835904
REFERENCE 28 (sites)
AUTHORS Bernardi,F., Legnani,C., Volinia,S., Patracchini,P., Rodorigo,G., DeRosa,V. and Marchetti,G.
TITLE A HindIII RFLP and a gene lesion in the coagulation factor VIII gene
JOURNAL Hum. Genet. 78 (4), 359-362 (1988)
MEDLINE 88197150
PUBMED 2896159
REFERENCE 29 (residues 1 to 2351)
AUTHORS Truett,M.A., Blacher,R., Burke,R.L., Caput,D., Chu,C., Dina,D., Hartog,K., Kuo,C.H., Masiarz,F.R., Merryweather,J.P. et al.
TITLE Characterization of the polypeptide composition of human factor VIII:C and the nucleotide sequence and expression of the human kidney cDNA
JOURNAL DNA 4 (5), 333-349 (1985)
MEDLINE 86081164
PUBMED 3935400
REFERENCE 30 (residues 1 to 2351)
AUTHORS Gitschier,J., Wood,W.I., Tuddenham,E.G., Shuman,M.A., Goralka,T.M., Chen,E.Y. and Lawn,R.M.
TITLE Detection and sequence of mutations in the factor VIII gene of

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haemophiliacs
JOURNAL Nature 315 (6018), 427-430 (1985)
MEDLINE 85213871
PUBMED 2987704
REFERENCE 31 (residues 1 to 2351)
AUTHORS Toole,J.J., Knopf,J.L., Wozney,J.M., Sultzman,L.A., Buecker,J.L., Pittman,D.D., Kaufman,R.J., Brown,E., Shoemaker,C., Orr,E.C. et al.
TITLE Molecular cloning of a cDNA encoding human antihaemophilic factor
JOURNAL Nature 312 (5992), 342-347 (1984)
MEDLINE 85061550
PUBMED 6438528
REFERENCE 32 (residues 1 to 2351)
AUTHORS Wood,W.I., Capon,D.J., Simonsen,C.C., Eaton,D.L., Gitschier,J., Keyt,B., Seeburg,P.H., Smith,D.H., Hollingshead,P., Wion,K.L. et al.
TITLE Expression of active human factor VIII from recombinant DNA clones
JOURNAL Nature 312 (5992), 330-337 (1984)
MEDLINE 85061548
PUBMED 6438526
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from M14113.1.

Summary: This gene encodes coagulation factor VIII, which participates in the intrinsic pathway of blood coagulation; factor VIII is a cofactor for factor IXa which, in the presence of Ca+2 and phospholipids, converts factor X to the activated form Xa. This gene produces two alternatively spliced transcripts. Transcript variant 1 encodes a large glycoprotein, isoform a, which circulates in plasma and associates with von Willebrand factor in a noncovalent complex. This protein undergoes multiple cleavage events. Transcript variant 2 encodes a putative small protein, isoform b, which consists primarily of the phospholipid binding domain of factor VIIIc. This binding domain is essential for coagulant activity. Defects in this gene results in hemophilia A, a common recessive X-linked coagulation disorder.

Transcript Variant: This variant (1) is the full length product and includes 26 exons.

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	/db_xref="taxon:9606"
	/chromosome="X"
	/map="Xq28"
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	/note="coagulation factor VIIIc; procoagulant component"
sig_peptide	1..19
mat_peptide	20..2351
	/product="coagulation factor VIIIc, isoform a"
mat_peptide	20..1332
	/product="activated factor VIIIc heavy chain (200 kda)"
mat_peptide	20..759
	/product="activated factor VIIIc heavy chain (92 kda)"
Region	218..349
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	/note="Cu-oxidase"
	/db_xref="CDD:pfam00394"

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                     plastocyanin-like domain"
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                     are only found with low scores"
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                     are only found with low scores"
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                     /note="Isoform a is encoded by variant 1."
                     /db_xref="LocusID:2157"
                     /db_xref="MIM:306700"
ORIGIN
        1 mqielstcff lcllrfcfsa trryylgave lswdymqsdl gelpvdarfp prvpksfpfn
       61 tsvvykktlf veftdhlfni akprppwmgl lgptiqaevy dtvvitlknm ashpvslhav
      121 gvsywkaseg aeyddqtsqr ekeddkvfpg gshtyvwqvl kengpmasdp lcltysylsh
      181 vdlvkdlnsg ligallvcre gslakektqt lhkfillfav fdegkswhse tknslmqdrd
      241 aasarawpkm htvngyvnrs lpgligchrk svywhvigmg ttpevhsifl eghtflvrnh
      301 rqasleispi tfltaqtllm dlgqfllfch isshqhdgme ayvkvdscpe epqlrmknne
      361 eaedydddlt dsemdvvrfd ddnspsfiqi rsvakkhpkt wvhyiaaeee dwdyaplvla
      421 pddrsyksqy lnngpqrigr kykkvrfmay tdetfktrea iqhesgilgp llygevgdtl
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 841 pgaidsnnsl semthfrpql hhsgdmvftp esglqlrlne klgttaatel kkldfkvsst
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1261 gayapvlqdf rslndstnrt kkhtahfskk geeenleglg nqtkqiveky acttrispnt
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1561 gkvpflrvat essaktpskl ldplawdnhy gtqipkeewk sqekspekta fkkkdtilsl
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1681 idyddtisve mkkedfdiyd edenqsprsf qkktrhyfia averlwdygm sssphvlrnr
1741 aqsgsvpqfk kvvfqeftdg sftqplyrge lnehlglllgp yiraevedni mvtfrnqasr
1801 pysfysslis yeedqrqgae prknfvkpne tktyfwkvqh hmaptkdefd ckawayfsdv
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1921 pcniqmedpt fkenyrfhai ngyimdtlpg lvmaqdqrir wyllsmgsne nihsihfsgh
1981 vftvrkkeey kmalynlypg vfetvemlps kagiwrvecl igehlhagms tlflvysnkc
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//
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